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## A DAY AT DE LA RUE'S.

'WHERE to, sir?' said the cabman, touching his hat, and leaning from the box. 'Bunhill Row.' In a moment I was off, and very speedily found myself hurrying through Clerkenwell, towards that curious and classic labyrinth of streets composing the north-east division of the metropolis. The difficulties of Chiswell Street and Barbican were passed, and I was set down at a port-cocher, the limit of my excursion, as the good early hour of eleven sounded from St Paul's.

It was a visit of curiosity. I wished to see one of the most remarkable establishments in London—an establishment which could only flourish in the midst of a great and wealthy people—De la Rue and Company's manufactory of fancy stationery. The art of writing letters is pretty nearly as old as the hills; but, till within the last twenty years, there was no such thing as a tastefully-got-up epistle. There was a deficiency in the *mécanique* of letter-writing. In Norway, at the present day, when a person wishes to write a note, he cuts a piece from a large sheet of paper; and something of this sort was prevalent in England forty or fifty years ago. It was considered a great advance in taste when a paper-maker at Bath got up what he called his 'Bath post'—a smooth yellow paper, quarto size, with a small stamp in the corner of the sheet. Matters remained at this point till a comparatively recent period, when the whole business of the stationer underwent a rapid and most extraordinary change—the establishment of the penny post alone causing the introduction of many new auxiliaries to epistolary correspondence. It cannot but be interesting to know who has led this great movement—who has filled the ladies' writing-cases with finely-tinted note papers—who has given to the world the envelope, the enamelled calling-card, and the numerous other elegancies which now fill the shop-window of the stationer. Different active spirits have contributed their respective inventions in this useful department of art, but the master-mind has been that of Thomas De la Rue. Mr De la Rue is a native of Guernsey, and was bred to the business of a printer. He afterwards abandoned this profession, and was engaged for a number of years in London as a manufacturer of straw-hats. In consequence of the successive changes in fashion, which ended in the general disuse of straw for bonnets, this ingenious person was several times ruined; but, possessing a boundless buoyancy of temperament, and with inexhaustible inventive faculties, he always alighted on some fresh novelty, and recovered his former position. Finally, driven from straw, he fell upon the idea of making bonnets of embossed paper. This was a great hit; but ladies soon discarded paper hats, and Mr De la Rue, for ever abandoning bonnets, took up the card and paper trade. He had now a wide

field before him, and, in the preparation of various little articles, excited and cultivated the public taste. At the end of twenty years, we find him the elder member of a company, with which are associated two of his sons. What was once a small and obscure concern, is now the largest of the kind in the world.

Entering by the large gateway of this interesting establishment, I was, by the kindness of one of the partners, conducted over the several departments of the works—the whole nestling in a cluster of old edifices, and forming an amusing hive of industry; steam-engines, machinery, and animated beings, commingling in restless and varied movement. The purpose of nearly all that strikes the eye, is to cause paper to assume new forms and appearances. Of this article, forty-five thousand reams, valued at L.30,000, are consumed annually—a quantity so great, that it would require three mills for its production. Of the other articles used, such as colours, oils, varnishes, leather, and gold and silver leaf, the value may be set down at from L.10,000 to L.12,000. I hope it is not trespassing on confidence likewise to mention that even the money paid for gas amounts to L.400, and for coal L.600 per annum. The coal is employed principally in furnaces for the steam-engines, of which there are two, one of eight, and the other of fifteen horse-power. With steam-pipes from the furnaces, the whole establishment is safely and economically heated. It will perhaps afford still more impressive considerations of the completeness of the arrangements, when I observe that the first place into which I was conducted was a large apartment devoted exclusively to the making and mending of machines. Here, at massive iron planing tables, and turning apparatus, I found five or six engineers busy at work, preparing lately-invented machines of different kinds. Mr Warren De la Rue, by whom some of the most ingenious machines have been constructed, superintends this and other mechanical departments. This young gentleman mentioned to me that they could not possibly conduct their business with satisfaction and profit, unless they had always ready at hand the means of repairing and making machinery; the time lost and trouble expended in getting this species of work done out of the house would be tormenting and ruinous.

Adjoining this department is a mill-like apparatus for grinding colours, and materials for enamelling; and further on, in two upper apartments, is a laboratory, with retorts, mixtures, and a store of bottles sufficient to set up a chemist's shop: here is also a chemical library of French and English books, which are in constant requisition. It is deemed somewhat of a favour to be admitted to this department; for many projects for executing new and peculiar tints and surfaces, likewise processes for electrotyping, not generally known, are here daily in operation. The electrotyping, which is

carried on by means of large troughs full of the appropriate liquids, is employed to multiply casts of any engraved, or otherwise figured surface. Mr De la Rue has carried his ingenuity so far in this branch of art as to produce an electrolyte plate, in copper, from the finest lace, and has hence been able to impart the effect of lace to printing in colours. How curious that a piece of delicate tissue, taken from a lady's cap, can, by means of troughs, acids, and other materials, along with electric action, be made to produce a solid plate of copper from which the pattern of the original can with facility be printed! Instead of using wax for taking moulds, *gutta percha*, a newly-discovered substance from Borneo, has here lately been introduced. It partakes principally of the nature of caoutchouc; but with this is combined a certain farinaceous quality, and it therefore retains impressions better than preparations of India-rubber.

By the electrolyting process, a very small piece of engraving can be multiplied to any extent; and therefore, supposing we wish the surface of a sheet of paper to be printed all over with a continually-repeated pattern—for example, the patterns on the backs of playing-cards—we need only engrave a single square inch: having got the electrolyte repetitions of the original, they are all soldered together, and the sheet of printing surface is formed. Of what immense value to the arts is this discovery, any one can form an opinion. Mr De la Rue, however, is prouder of his wire-cloth inventions than of any improvements he may have introduced into the process of electrolyting. In order to produce printing in colours, like the checks of tartan, or any other diversity of lines, he has succeeded in forming, by means of the Jacquard loom, a cloth of brass wires, each wire being a type, so to speak; and the cloth being fixed on a block, it gives an impression of great clearness and beauty. The cross-lined coloured papers which one sometimes sees in the fly-leaves of books, and on the backs of cards, are effected by this ingenious application.

So far I have spoken only of things of a preparatory nature, and yet the list is not half exhausted. Above the electrolyting room is one occupied with die-sinkers and engravers—men busy with hammers, punches, and chisels, executing objects to be employed in some of the more elegant kinds of printing. Besides these artists, many individuals, I was told, were employed out of doors in designing patterns. On this branch, indeed, some of the best artists in London are occasionally engaged. Novelty and taste are never for a moment neglected. Mr De la Rue mentioned to me that he sometimes gives as much as £20 or £30 for the drawing of a design not larger than your hand. The best classic models of antiquity are sought out, and so likewise have there been procured some of the most tasteful designs after Saracenic originals. Perfect novelty, however, is a governing principle. The object of the concern is to maintain a high character for originality—to copy from no one, English or continental. Formerly, in England, few or no manufacturers thought of going to the expense of employing designers, and consequently designers did not exist amongst us. In the chief manufacturing towns there might have been here and there a dissipated man of genius, who, when he could be laid hold of quite sober, would, for a guinea or so, furnish a design, such as it was; but there was no principle in the thing, and almost every manufacturer copied from French originals; the more enterprising among them bribing French workmen to send early copies of what they had begun to execute. The necessity for competing with continental manufacturers in the home market, consequent on the late free-trade measures, has, among respectable men, put an end to this meagre and shabby state of affairs. Every respectable tradesman, who desires to avoid following among the mere herd of imitators, not only employs skilled designers, but is constantly racking his brains how he is to maintain his place in the market. It sounded

new to me, in general principles of trade, to be told that no man can now expect great success in any fancy manufacture *unless he competes with himself*. Competition with others went do any longer. The true art consists in not waiting to be stimulated by rivalry, but in bringing out fresh novelties at proper times, one after the other, and so gaining a command, as it were, over the public taste. I was taken with this idea of Mr De la Rue; it showed him to be a master in his craft.

Having been conducted through the preparatory departments of the establishment, I was now introduced to what forms a principal branch of manufacture. This is the making of playing-cards, which engages a considerable number of hands, and several machines and presses. The figures on playing-cards are among the earliest things mentioned in the history of printing; and there they are, with scarcely any alteration, till the present day. While the figures, however, remain pretty much what they were, there has been a great advance in the mode of manufacture, and also in the quality of the card. Formerly, the figures were stencilled in water-colours; and some makers, it is believed, still continue this clumsy process. Mr De la Rue, some years ago, introduced the improved plan of printing the cards with inks, or colours in oil, by which means no degree of rubbing or moisture of the hand can move the figures. At one time, playing-cards were plain on the back; now, they have generally backs printed with fanciful figures; and therefore each side of the card requires its own appropriate printing. Let me first speak of the face. A sheet of paper, containing forty cards, is printed at once. If the card have figures of only one colour—as, for instance, all spades, which are black; or all hearts, which are red—then one impression is sufficient. But if there be several colours, as in the case of the honours, each has a separate impression from a differently-engraved block; the last impression completing the figure. In executing a knave of clubs, for example, they first print his eyes, and other parts about him which are blue; an impression from a second block fills in the reds; a third imparts the yellows; a fourth the flesh colour of the face; and a fifth gives the blacks. Each court-card, therefore, requires to go through the press five times; but, to save trouble, a large quantity of one colour are executed at a time. Sheets for the backs of the cards are printed in a similar manner, but on paper which has been tinted in making.

The printing of playing-cards, numerous as are the impressions they must undergo, is but a small part of the manufacture. Having seen the printed sheets carried away to the drying-room, we proceeded to the pasting process. This was a greater novelty to me than printing. I was first taken into a side-room, where were several women mingling together sheets of paper of different qualities, according to certain prescribed arrangements. When a pile of sheets was completed, it was carried away to the pasting-room. Here there were two long tables, with a number of men at work. Each of these had on his left a pile of the mingled sheets, and on his right a tub of paste. Lifting a sheet with his left hand, and laying it on the bench before him, he speedily smeared it over with the great paste-brush he held in his right; next were laid down two sheets, only the uppermost of which was pasted; and thus there arose a great pile of pasted sheets, with unstap intervals. The whole operation was performed in a rapid and business-like way, with all the regularity of a machine. The brush, which seemed to be made of soft bristles, was as large as the besom of a housemaid, but without any handle; and I was assured that so methodic do the men become in their movements, that the brush in each case performs precisely the same curvilinear evolutions. In this manner, from year's end to year's end, do these men work away with their great broad pasting-brushes, constructing the internal part of playing-cards. Coarse as this branch of labour appears, it is reckoned one of skill, and is accordingly well-paid. The weekly wage of a good paster is about two pounds;

some can realise as much as fifty shillings. The making of the paste is a separate branch; men being constantly employed in an adjoining room, over huge cauldrons, preparing this material, which chiefly consists of fine flour; but a substance like whiting is also infused, in order to give solidity to the card. The quantity of flour consumed annually is four hundred sacks, from which two hundred gallons of paste are prepared and used daily.

The pile of sheets, while dripping wet, being taken from the paster, is placed in a hydraulic press, and being there subjected to a hard pressure, the sheets become well squeezed together. A long row of hydraulics stands behind the pasters for this purpose. The sheets are afterwards separated into boards, and hung up to dry. The pasting of the figured sheets to the front and back of the board is a final operation; and when this is done, every board consists of forty cards. There is yet, however, much to be effected in the way of drying, smoothing, and cutting. The drying-room is an extensive series of vaults, to which I was let down by an apparatus called a *lift*. The moist boards being dropped down in large quantities by this machine, are hung on poles, and dried by the heat of five hundred feet of iron pipes, through which steam from the engine is blown. To ventilate and remove the moisture from the vaults, a fan is kept constantly rotating and propelling air at the rate of 2000 cubic feet per minute. Having undergone a due baking in this warm and airy oven, the boards are lifted to a second floor, to which we shall follow them.

The second floor exhibits a busy scene of rolling and other apparatus, with great quantities of pasteboards and sheets in different stages of advancement. When a card-board reaches this department, it is for the purpose of being rendered perfectly smooth on the surface. Some persons would think that this end could be best effected by at once passing the boards under the severe pressure of metal rollers. This is a natural, but erroneous idea. On looking with a microscope at the surface of a card-board just come from the drying-room, it is found to consist of a series of small protuberances or hillocks. Now, if these were at once flattened by rollers or other means, the tops of the hillocks would be crushed down partly over the intermediate valleys, leaving minute portions of the valleys uncrushed; consequently, in shuffling cards, one would, to a certain extent, catch on another. To avert this, the card-boards are, in the first place, burnished all over with a rapidly-revolving brush, which searches into every hollow, and sweeps away any loose particles of matter. The next step is to level both sides by rollers; but here, again, a remarkable principle in mechanics is observable. Two surfaces smoothed in the same manner will not glide over each other so well as if they be smoothed differently. In smoothing the card-board, therefore, it is passed between two rollers, the lower of which is of metal, and the upper of paper; both are equally smooth, but they impart a certain variety in the dressing, to cause a sufficiently easy gliding of the cards, face and back. The paper roller is prepared in a way which no one could expect. A great pile of sheets being pasted together, squeezed to the hardest possible consistency, and dried, the mass is fixed on a spindle, and turned on a turning-lathe; the result is a smooth, round beam, the surface of which consists entirely of edges of paper, but the whole of as close a texture as a piece of finely-polished wood.

The operation of finishing is not yet by any means over. After being taken from the smoothing rollers, the boards are transferred to an apparatus for giving them a wash of certain kinds of liquid, the object of which is to harden them, and render them impervious to the moisture of the hand. Following the principle already alluded to, the wash, which has a glazing effect, is of a different kind on the two sides, although to the naked eye the gloss is the same on both. These washes being dried, the card-boards are placed between sheets

of brass, and passed, a few at a time, betwixt milling-rollers. They are now carried to a hydraulic press for flattening; and here, having been subjected to a pressure of a thousand tons, they are taken out in the hard, flat, glossy condition in which they come under the eye of the public.

Removed from the pressing-room, the boards next migrate to the cutting apparatus. With this machine a man cuts them, individually, first into long slips, and next across into single cards. With such accuracy is this operation performed, that although the cutter turns out 20,000 cards in a day, all are of precisely the same dimensions. The sorting into qualities next takes place, and requires much sharpness of hand and eye. Inspected minutely as they pass through the hand, they are thrown into three heaps, from one of which are made up packs called *Moguls*; from the second are made up *Harrys*; and from the third *Highlanders*. The *Mogul* cards are of prime quality and highest price; they have no speck or flaw on either back or face. The *Harrys* have each a single speck on the back or face; and the *Highlanders* have one or more specks on both sides. Why the portraits of the Great Mogul, Henry VIII., and that of a Highlander, should have been adopted as a cognisance on packs of playing-cards, I have not heard explained.

To complete the history of the manufacture, I might say something of the wrapping-up, the paying for engraved aces of spades to government, and the exportation of untaxed packs; but all this may be left to the imagination; and it is enough to say, that of one kind or other, the concern I am speaking of makes and sells a hundred thousand packs annually. The quantity of cards paying duty issued by the different makers is, I believe, about two hundred thousand packs in the year, besides which, probably double the quantity are made and exported duty free. The consumption of playing-cards in the United Kingdom is, to all appearance, stationary, notwithstanding the continual increase of population; it would, however, be rash to ascribe this altogether to a gradual diminution of card-playing propensities. It is believed that there is a prodigious sale of cards with surreptitious stamps; and it is Mr De la Rue's opinion, founded on a knowledge of the trade, that were the duty reduced from a shilling to threepence per pack, the government would derive ten times the amount of revenue from this branch of manufacture.

At one time Russia was one of the best customers in Europe for playing-cards; but this trade is now at an end, in consequence of that country having engaged in the manufacture itself; nor, judging from the quantity it makes away with, does this step seem unreasonable. In Russia, card-playing is a universal amusement, and will in all probability continue to be so while the people remain illiterate, and political speculation is attended with danger. To supply the demand for cards, the government took the fabrication of the article into its own hands, and with much liberality not only purchased from Mr De la Rue a knowledge of the manufacture, but induced his brother to take the entire charge of the establishment in which the cards are made. The quantity of cards thus made annually for Russian consumption is a million of packs, the profits on the sale of which are devoted to charitable purposes.

Hitherto I have spoken only of the manufacture of playing-cards, but it will be understood that visiting and other kinds of cards are made much in the same manner. Of all the varieties of cards which exist, playing-cards were the original type. Forty or fifty years ago, the only blank cards in use were the parings or other waste of cards for playing, and it was on trimmed morsels of this waste that visitors were in the habit of inscribing their names when they made a call. The fashion of leaving cards having at length established itself among our national customs, small blank cards of a superior kind were made on purpose, and now we find every variety which can be desired. Latterly, ena-



melled cards have been in vogue, and the making of these has become an important branch of Mr De la Rue's manufacture. So, likewise, has the making of railway tickets of late assumed a more than ordinary importance. Nearly all the railways in the United Kingdom procure their tickets from this establishment, each having its own pattern as respects colour and device. The card-boards for these tickets are cut by boys with such rapidity, that the eye can scarcely follow their movements. The aggregate quantity of tickets produced by the establishment is at present a million and a half weekly.

From the card-making department I was led into that which is devoted to the preparing of post-office and other envelopes; but I must postpone what I have to say on that interesting branch till another occasion.

### SLIPS OF THE TONGUE.

It has latterly become so much the fashion to laugh at what has been termed the wisdom of our ancestors, that it is with some hesitation, and almost as if treading on interdicted or deserted ground, that we would venture to recall a specimen of their proverbial lore, and to relate some instances of the protection we have seen afforded to the indiscreet and unwary by the indulgent, though scarcely logical maxim, 'A slip of the tongue is no fault of the mind.' And yet it is a refreshing thought, in this working-day, scrambling, elbowing world, where every slide-backward gives room for the step-forward of another, and each mistake is a misfortune, to remember that there did exist a good old holiday time when proverbs were invented to cover unpremeditated faults, and when, as if by a magic spell, of which each heart acknowledged the potency, murmurs were hushed and suspicion cleared away by the utterance of a little sentence, simple and undemonstrative indeed, yet eloquent even to the present hour in conveying to our imaginations a picture of the blundering, cordial kindliness of more primitive times, and, from habit and association, not entirely divested of its power in our own.

Many a saying might have been chosen, evincing more shrewdness and practical knowledge of the world, though hardly a more trusting or a kinder; but, without arguing on its merits, we confess our present selection to be influenced by an early partiality acquired for this proverb, when, long before acting them had become a fashionable amusement, it was our fortune to witness a twofold performance of the adage, attended in each instance with undoubted, though somewhat dissimilar success.\*

The first representation was exhibited at a dinner given by a cross and particular old bachelor, who prided himself on the precision of his household arrangements, and the excellent order of his establishment. We were seated round the table, the soup had been swallowed in silent approval, the fish with equal success had followed, and a remove was about to be placed before the master of the house, when the unlucky domestic who carried it suddenly tripped and fell, dish, cover, and contents 'in one fell ruin blent.' Portentous thunder gathered on the brow of our host, a low growl preceded its utterance, and the guests were beginning to exchange glances of discomfort at this sudden interruption of their har-

mony, when one of them, as ready-witted as good-natured, looking over the back of his chair, perceived the prostrate joint to be a tongue, and quietly remarked that the servant should be excused, as 'A slip of the tongue was no fault of the mind.' Amidst the burst of laughter which followed this happy suggestion, the offence was forgotten, the good-humour of our host returned, a fresh impulse was given to conviviality, and the entertainment became distinguished in a degree most gratifying to the vanity of the entertainer.

But amongst the guests there was one who, both from character and appearance, would have been imagined of all others the least likely to appreciate a witty remark, and who yet evidently enjoyed this one far beyond the rest. It might have been that his good-nature exulted in the servant's escape, or his love of ease in deliverance from the threatened storm, or else the memory of his host's irascible countenance was ludicrously impressed on the retina of his imagination; however this may be, he retained the joke long after the rest had forgotten it; and several times during the evening, to the surprise of his nearest neighbours, the fat sides would shake with stifled mirth, while over and over again he would murmur, in merry mood, 'A slip of the tongue is no fault of the mind.'

His turn to give an entertainment—for in those good old days hospitality was an established rule—soon came round, and we were fortunate enough to be included in the invitations; rather singularly too, for, with our exception, the company was entirely different from the former party, and though the variety was perhaps not altogether pleasing, yet our host was a host in himself: there he sat, his usually bland and smiling countenance now actually beaming as he hurried through the preliminary courses with an ill-suppressed impatience, which seemed to promise something super-excellent in reserve. The turbot had been ordered, away, in the opinion of some with needless expedition, and expectation was now on full stretch for its successor, when, just as the dish was about to be placed on the table, once more to our surprise the servant, with a sort of deliberate awkwardness, stumbled forward, and down rolled an enormous piece of beef upon the floor.

Our host shouted with delight, rubbed his hands, and vociferated, 'A slip of the tongue is no fault of the mind.' The guests stared at him and at each other with astonishment, in which all sense of the ridiculous was lost in the apprehension that their worthy friend had suddenly taken leave of his senses. He, absorbed in his own enjoyment of the joke, failed to perceive how little it was relished by the company, until at last leaning back exhausted, and wiping his eyes, he noticed for the first time the blank countenances on either side of him. 'Eh! what is the matter?' exclaimed he: 'why are you not all laughing?' and without waiting a reply, he proceeded to relate the bon-mot of the former entertainment, adding, in the half-jealous tones of disappointed rivalry, 'I asked you all, and threw away my fine piece of beef, that we might have the laugh over again, and here you look as solemn as if you were invited to a funeral!'

The look, the tone which accompanied this confession, were alike irresistible, and the laugh which immediately re-echoed through the room amply compensated for former dulness; the worthy alderman's countenance once more expanded, he accepted the mirth excited by his blunder as a tribute to his wit, and, forgetful of his candid explanation, believes to this hour that no scene could have been better managed, no applause

\* The anecdote which immediately follows we have seen many years ago in some collection of such facetie. Yet we have no reason to doubt that our correspondent, the writer of the article, is in earnest when she speaks of having been present when the facts took place.—Ed.

better deserved, than that which followed his much-admired impromptu.

Our attention thus early turned to this proverb, it has often since then seemed to cross our path, and ever, by its benignant influence, assisting to avert or neutralise the consequences which too often result from 'an idle word'—a word perhaps spoken in heedless inattention, the half-unconscious utterance of some pre-occupying thought, and yet capable of producing effects as important as if they had been the development of some premeditated plan. We can remember making one of a large Christmas party—a family party, including aunts, uncles, and cousins to the third degree, old and young, grave and gay. Shortly before dinner, one of the busy-bodies ever found in such a collection made her way to the dressing-room of Mrs Raymond, the lady of the house, and with an exceedingly long face remonstrated with her for having invited a certain individual, as nothing could be more *mal-à-propos* than to have him thrown into the society of one of the young ladies of the party, there being undoubtedly an attachment between them, unsanctioned and unsuspected by her parents. This theme was so forcibly enlarged on, that the listener felt agitated at the idea of having involuntarily afforded facility to an affair described as clandestine and reprehensible, and went to dinner, her fair brow somewhat clouded, and her mind full of the details to which she had just been compelled to give her attention.

Her inward comfort was not much increased when, glancing down the table, she perceived the accused parties in juxtaposition at the lower end, both looking most intelligently happy. Her thoughts became so engrossed by this contretemps, that, in speaking to her young cousin, she addressed her from the far end of the table as 'Jane Wallis,' unintentionally designating her by the name she would have borne had she and her admirer been already united in the bonds of holy matrimony. The young girl hesitated whether to answer, colouring deeply with painful consciousness, while Mrs Raymond, quite unconscious of her mistake, reiterated again and again, with some slight impatience, the question and the name. Tears were rising to poor Jane's bright eyes. Some of the relations, who half-suspected how matters stood, smiled significantly, while two or three of the youngsters laughed outright. Mrs Raymond at last perceiving something had gone wrong, looked round for explanation, and was only recalled to a sense of her indiscretion by encountering the astonished, half-indignant glance of Jane's mamma, who murmured, in reproachful accents, 'Maria! what can you mean?'

With blushes and confusion Mrs Raymond in vain tried to apologise. An angry spot had fixed itself on more brows than one; and an apparently trivial circumstance might have ended in a serious family quarrel, had not a good-natured old uncle come to her relief, and, interposing our favourite proverb, exclaimed, 'Come, come, 'tis not worth thinking of; 'twas only a slip of the tongue, and we all know that is no fault of the mind.'

Mrs Raymond's eyes silently thanked her warm-hearted advocate; and finding him thus able to influence opinion, the young people also retained him on their side. In the explanation which inevitably ensued, he proved the case to be much less desperate than the busy-body had anticipated. A full confession was made, parents were indulgent, friends lent a helping hand, and when, at the next festival, the family party re-assembled, they all felt more united than ever. The young girl was again addressed as 'Jane Wallis,' and this time there was 'no mistake.'

Thus surely—surely our forefathers were right when they invented this charitable little covering for a fault whose punishment springs at once from the heart, and of all others requires least correction from without?—the annoyance, the awkwardness, the ridicule, are visited on the absent one in a tenfold degree. Honour,

then, to the old-fashioned kindness which disarmed them of their sting, and silenced the darker charge of malice before it could be made!

But of all verbal errors, that from which the perpetrator awakes of his own accord to a half-dreamy consciousness that he has made some blunder, which is all the while believed, and about to be acted on by his too credulous auditors, is the most distressing and perplexing. He doubts, yet feels too uncertain to contradict his first statement; he winds up his courage to the point of self-accusation, then retreats on the hope that he may be right after all, and his conscientious struggles are suppressed by the expediency of 'letting well alone,' until at last some convincing fact brings him to a late confession, and leaves him the victim of his 'world's dread laugh.'

A friend of ours, a young Englishman, was appointed to a lucrative situation in a wild and remote district of Ireland, where national habits and prejudices prevailed in a more than usual degree. Amongst other customs strange to him, he remarked that the inhabitants seemed universally to take a pride in perpetuating what he considered their semi-barbaric patronymics, and, as the most effectual method, invariably converted them into Christian names. To our friend Frank Nesbitt, however, they savoured of anything but Christianity: as surnames, they were puzzling enough; but the second edition made confusion worse confounded; and every introduction seemed to offer a fresh personification of 'the two single gentlemen rolled into one.' For instance, there were Connor O'Neil, and Neil O'Connor; Gerald Fitzmaurice, and Maurice Fitzgerald; Donnough O'Brien, and Brien M'Donnough; in short, there was no end to those friendly transpositions, and a less persevering spirit than Frank's would have given up in despair the idea of forming a correct list of his acquaintance. Not so with him, however. Nothing daunted, he made a point of conquering the difficulty, and soon arrived at the degree of actually priding himself on the precision with which he steered, his intricate way. But we have the best authority for knowing that pride goes before a fall. 'What's in a name?' is an interrogatory more easily made than answered; and Frank, before long, found to his sorrow that it was a very important question indeed.

There was a family in the neighbourhood whose acquaintance he considered particularly desirable, and, as usual in such a case, he found particular obstacles in the way. Visits had been exchanged, but always with the ill fortune of finding the parties from home; invitations had met with the same untoward fate; and an occasional meeting at the house of some mutual friend was the only progress he had hitherto made. These interviews, however, increased his anxiety for further intimacy: so at last, resolved to make assurance sure, he mounted his horse one fine day, and arrived at Overton Hall at the unreasonable hour of noon, and was rewarded for the exertion by finding the family for once at home, and, in addition, apparently quite surprised by their early visitor. A rush across the hall told of slippers and papillotes; doors were slammed, garments rustled, and quick footsteps hurried away; and Frank was at length admitted, and ushered into the drawing-room, quite provoked with himself for what looked almost like intrusion, and full of disappointment at this sudden disenchantment of his own particular dream.

But as he entered the apartment, all evil surmises quickly vanished. He found it occupied by the very person who at the moment engrossed his thoughts, and who, we may as well at once acknowledge, was the magnet that had attracted him all along. Self-possessed, and with somewhat of distant politeness, Gertrude Blake laid by her work to receive him, at the same time desiring the servant to acquaint her father with Mr Nesbitt's arrival; and Frank felt at once convinced that, whatever confusion his unseasonable visit might have caused, it certainly had not extended to the fair inmate of that room. Her simple morning dress, so elegantly

neat, her shining hair, her quiet occupation, all told of habits too confirmed to feel interruption from any casual visitor, however early; and Frank was already quite ashamed of his suspicions, and beginning to discard them as entirely unfounded, when again the door was thrown open, and, accompanied by her husband—overdressed, be-flounced, be-ringed, and panting from the recent labours of the toilet—the real fugitive made her appearance in the portly person of Gertrude's stepmother, the second Mrs Blake.

Both she and Mr Blake entered the room, impressed with the idea that a visit at that hour from a person with whom they were scarcely acquainted could only be one of business; so, after the first greetings and usual commonplaces were exchanged, there was a pause of expectation on their part, interrupted at last by Frank himself, who with some trivial remark endeavoured to renew the conversation; but the owners of the house were prepared to listen, not to talk, and felt it would be quite superfluous and unmannerly to prolong any subject which might lead away from the point at issue. Thus effort after effort on Frank's part died away: he inwardly pronounced them the most stupid beings in existence; and instead of starting fresh subjects, would have started himself, were it not for the occasional support he received from Gertrude, who now and then, with a word or a smile, relieved the awkwardness, and encouraged him to remain. But this heedless courtesy was soon checked by a frown from her stepmother; and, in obedience to the signal, the long, bright curls swept the embroidery frame, as her fair head was bent over it, to be raised no more. Paganini being the only person we ever heard of who could produce much harmony from one string, we must not wonder that Frank Nesbitt's solitary efforts were at last disconcerted: impatience on the other side was fast conquering politeness, and a few moments more might have introduced remarks more inquisitive than satisfactory, when suddenly recollecting a piece of news he had heard that morning, Frank exclaimed in a tone of animation rather unsuitable to the subject, 'Did you hear of Donough O'Brien's death? He was killed by a fall from his horse out hunting yesterday.'

In his eagerness to communicate some piece of intelligence, Frank entirely overlooked the possible consequences. But had a shell exploded in the quiet apartment, it could hardly have produced a greater commotion. His attention was first arrested by an exclamation from Gertrude, who, with pale cheek, and eyes opened to their fullest extent, gazed at him for a moment, then colouring deeply, bent in silence over her work again. Mr Blake gave him a glance of intelligence, which plainly said, 'At last the murder is out!' though at the same time it seemed to say that their curiosity might have been relieved with less abruptness. But all was nothing in comparison of the effect on Mrs Blake. She was just that sort of overgrown, florid, unwieldy-looking person, to whom any sudden agitation is overwhelming; and before a word could be spoken, or a question asked, she had fallen back in her chair, the thick gurgling sound of her sobs burst upon the ear, violent hysterics succeeded, and, amidst a scene of confusion and agitation, her husband, assisted by Gertrude, bore her from the room.

Frank remained behind, quite thunderstruck with this sudden change of affairs. No word of explanation had passed, no time had been given for apology, and feeling that though his conversation could no longer be considered uninteresting, it would surely be condemned as unfeeling, he awaited Mr Blake's return with some anxiety, to remove that impression. But matters were apparently very serious; for though he lingered more than an hour, and saw servants occasionally hurrying to and fro with much bustle and excitement, yet no one came near him; so, concluding himself forgotten, he was about to take his departure, full of self-reproach for his thoughtlessness, when Mr Blake re-entered the room.

The old gentleman apologised somewhat coldly for his lengthened absence, saying that he could not leave Mrs Blake, as she had been quite overpowered by the sudden news of Mr O'Brien's death, who was a particular friend and favourite of hers, and indeed a distant relation, but that she was now rather more composed, and he had left her to Gertrude's care.

Frank expressed his regret truly and earnestly at having spoken so inconsiderately; and then with some surprise Mr Blake became aware that the intelligence had been given quite inadvertently, as a mere piece of gossip, and in perfect ignorance of the sensation it was likely to produce. The formality of his manner vanished at once, and partly compassionating Frank's evidently genuine distress, and partly amused at his dilemma, he hastened to reassure him, and begged he would not give himself any further annoyance on the subject. 'Indeed, my dear fellow,' he frankly added, 'we took it for granted your early visit was purposely to break to us the news of this unpleasant casualty; and I was surprised, and I may now say half-angry, at your want of caution; but I am quite glad to find myself wrong, and that you knew nothing of the connexion. You must come out some other day, and make your peace with Mrs Blake. As to Gertrude, I believe you will find that no difficulty; for, to tell you the truth,' continued he, growing quite confidential, 'it was one of my wife's favourite plans to bring about a match between her and O'Brien. I may mention it, now that the poor fellow is gone; but I know my daughter was a good deal teased on the subject; and though I did not like to interfere, still it lessens my regret.'

With varied feelings Frank listened to this communication. As Gertrude's dimples and hazel eyes flitted across his memory, he might have echoed her father's concluding words, and said, 'It lessens my regret;' and could Mr Blake have read his heart at that moment, he might not so easily have acquitted him of *malice prepense*: but fortunately we do not walk this world with glass windows in our bosoms, so there was perfect unsuspicion in the grasp with which he shook his young friend's hand at parting, and entire cordiality in his tone, when, as if to make amends for former injustice, he invited him to come soon again, and spend any day that he had nothing better to do.

Frank rode away, and for a mile or two proceeded with some rapidity, as if to leave behind the memory of the unpleasant scene he had occasioned, and the feelings it had called up in his own breast; but relaxing his speed at the foot of a long ascent, he found himself leisurely recalling the circumstances of his visit, and reverting to their original cause. Suddenly the thought darted into his mind, was it really Donough O'Brien who was killed? or was it some other one of those provokingly similar names he should have said? He started at the idea, and tried to repel it as an absurdity. But it would intrude, and the more he pondered, the more uncertain he grew; at one moment confounded as he considered the consequences of such a mistake, at the next laughing at it as a trick of the imagination. He again accelerated his horse's pace, and eagerly looked out for some acquaintance to put him out of a suspense that was becoming almost intolerable; but, as it happened, he did not encounter one familiar face, and his agitation increasing at every step, he was several times on the point of accosting some stranger with the inquiry which now entirely engrossed his thoughts. Fearful, however, of committing himself further, he refrained; and at last, just at the entrance of the town where he resided, he met a friend, and hardly returned his greeting before he hastily bolted out the question, and had his worst apprehensions confirmed by the answer given, with some surprise, in the negative.

'Nonsense, man,' he replied vehemently; 'he is dead, I am sure; he must be dead: he was killed out hunting yesterday.'

His friend looked at him for a moment, as if doubtful of his sanity, then answered quietly, 'You are quite



mistaken, Nesbitt. Brien McDonough was killed; I am to be at the poor fellow's funeral to-morrow; but I was speaking to O'Brien not an hour ago: he was perfectly well, and going to dine at Blake's to-day! 'Tis said he has a fair attraction there. Believe me,' added he laughing, 'he is alive and well, and not the sort of man to let you kill him with impunity.'

There was no longer any room for incredulity. Frank hurried home, and, in addition to his morning's murder of Donough O'Brien, committed a wholesale breach of the sixth commandment, by fervently wishing every Mac, O', and Fitz, fathoms deep in the bog of Allen. The following morning he was called on, and would have been called out, by O'Brien, had not Mr Blake modified his anger by quoting our proverb. Its acknowledged authority influenced opinion, and even saved Frank Nesbitt, on being acquitted as a slanderer, from being convicted as a fool. The 'slip of the tongue' being granted, Mr Blake contended that 'it was no fault of the mind,' and thus doubly saved his young friend's reputation.

But he was condemned, during O'Brien's visit, to feel that he cut rather a silly figure while congratulating the man on his revival, whom he had slain with a breath, and listening to his humorous description of the sensation caused by his arrival at Mr Blake's. He had to laugh at the joke, though it was no joke to him when he encountered the history of his blunder in every circle he entered. His good temper and light heart, however, carried him through all, even through the difficulty of making his peace with Mrs Blake. For some time he did not dare to venture into her presence; but at last he received information that her prejudice had been overcome by the influence of an unexpected ally. A flag of truce was extended, and under that fair banner he was soon able to set all ridicule at defiance, and to return the witticisms of his acquaintance with the assurance that 'those may laugh that win.'

It was a saying of Catherine de Medicis, that a false report, believed for three days, might save a nation. She had studied human nature, and knew it well. So, as little things may be compared with great, Gertrude Blake experienced the truth of the maxim, and made such good use of her three hours' mistake, as to render her position for the future impregnable. In the first excitement of feeling, mutual confidence arose between her and her really warm-hearted stepmother, and the latter mingled with her lamentations for her friend sincere contrition for having persecuted Gertrude on his account, and faithfully and voluntarily promised never to interfere on such a subject again.

We need hardly add, that O'Brien found it impossible to regain the footing he had lost. His hopes were dead and buried, though he himself survived. So, as in his country a prophetic import is attached to the accidental report of a death, he left its fulfilment to his departed project, and sought for consolation in another quarter. Frank soon occupied the vacant ground; and in proportion to the declension of O'Brien's interest, his gained the ascendant. Gertrude Blake, with her usual animation, undertook his defence. She found herself a gainer by his error, and, in gratitude, could not allow him to suffer loss; so she lectured him on genealogy, and offered to teach him the brogue; laughed to himself at his blunders, and excused them to others. Her lessons daily became more attractive, her pupil more interested; until, under such tuition, he at last declared himself 'more Irish than the Irish!' and in the end fully convinced his fair instructress in the first instance, and through her the neighbourhood at large, that though their acquaintance had commenced with a 'slip of the tongue,' he could speak most effectually to the purpose when once he had a mind.

Lord Bacon has observed that 'the genius, wit, and spirit of a nation are discovered by their proverbs.' Let us trust that our present generation, in the midst of its improvements and acquirements, may not, in deeming itself wiser than the ancients, entirely reject

the character thus established by a good old race, or despise the warm-hearted kindness which must have prompted our homely proverb, and the charitable forbearance it may opportunely enjoin.

## RESISTANCE TO GREAT TRUTHS.

### HARVEY AND THE CIRCULATION OF THE BLOOD.

It has not unfrequently happened that, at wide intervals of time, certain speculative or inquiring minds have had glimpses of a truth—of some great natural fact. They have seen an effect, without being able to trace it to a cause—a portion of an outline, of which they were unable to make a finished picture. A long descent through many brains has seemed to be necessary for the entire elaboration of the principle; and although there may be something grand and startling in the discoveries which at times flash upon the world as the result of hazard, yet those which have been the work of thought, observation, deduction, and experiment, carried on laboriously through many years, forcing their way, as it were, into existence, are not the less worthy of our respect and admiration.

The history of the discovery of the circulation of the blood by our countryman Harvey, presents itself as an interesting illustration of the views here thrown out. Constituting, as it did, a fact of the highest importance in the human economy, giving a new form and purpose to physiological science, it nevertheless met with the usual fate of great truths, being received with ridicule, jealousy, and detraction.

William Harvey was born at Folkstone, in Kent, on the 2d of April 1578. He acquired the elements of learning at a school in Canterbury, and finished his education at Cambridge. Eldest of a family of nine, he was the only one who manifested any inclination for science. Having determined on devoting himself to medicine, he set out, at the age of nineteen, on his travels to France and Germany, visiting the principal anatomical schools on his way to Italy, in which country he studied anatomy for some years under the celebrated Aquapendente, founder of the school of Padua. Harvey devoted himself zealously to this pursuit. Before his time, anatomy had been nothing more than a speculative science, distorted by many absurd and superstitious notions; and the hindrances opposed to the dissection of the human subject, proved a formidable impediment to more accurate or rational researches.

Aquapendente had noticed the valves of the veins in his dissections, but it does not appear that he had any idea of their real use or importance. The sight of these was doubtless the cause of Harvey's investigations, and moved him, as he says, to write, 'to find out the use of the motion of the heart; a thing so hard to be attained, that, with Frascatorius, he believed it known to God alone.' He goes on to say—'Almost all anatomists, physicians, and philosophers to this day, do affirm, with Galen, that the use of pulsation is the same with that of respiration, and that they differ only in one thing—that one flows from the animal faculty, and the other from the vital, being alike in all other things, either as touching their utility or manner of motion.' It is evident that he was not unwilling to do justice to the labours of his predecessors, for elsewhere, to use his own words, he is thinking 'to unfold such things as have been published by others; to take notice of those things which have been commonly spoken and taught, that those things which have been rightly spoken may be confirmed, and those which are false, both by anatomical dissection, manifold experience, and diligent and accurate observation, may be amended.'

Once on the track, Harvey followed it up with unflinching perseverance: new facts came to light, and cheered him on with the hope of ultimate success. 'Observing,' he remarks, 'the valves in the veins of many parts of the body so placed as to give free passage to the blood towards the heart, but to oppose the

passage of the venal blood the contrary way, I imagined that so provident a cause as nature had not thus placed so many valves without design.\*

At length Harvey believed he 'had hit the nail on the head'; and having become a Fellow of the College of Physicians at the age of thirty, he was appointed professor in 1616, when he commenced a course of lectures, and for the first time modestly announced his 'great discovery of the circulation of the blood.' Content to go no farther for a time than in the hints thrown out, he waited with patience, until time had fully matured his views, before he gave them to the world. In the year 1628, when he was fifty years old, his researches were first published at Frankfort, in a small quarto volume, entitled *Exercitatio Anatomica de Motu Cordis et Sanguinis*,† dedicated to Charles I. In this work, as has been truly observed, 'Harvey, by his genius, followed nature in her windings, and forced her to unveil herself.' 'Scarcely one of the proofs which demonstrate the circulation escaped his researches; he showed it not only in certain parts, but followed it to its recesses—to the liver—where other anatomists had lost themselves. His book is one of the rare essays which exhaust the subject; it is short and comprehensive, clear and profound, dictated by reason and experience.'‡

He had diligently and perseveringly extended his inquiries beyond the human subject, with a view to verify his facts by comparison. The king, who, with all his errors, entertained enlightened views on science generally, placed at his physician's disposal the deer in the royal parks near London; and in addition to these, the zealous anatomist minutely examined the hearts of other mammalian animals, as well as of birds and fishes. His book contains an explanation, in clear and concise language, of the general mechanism of the circulation, and incontestable proofs of the truth of his theory. His own words will best convey the certainty and accuracy of his views. In the chapter on the action and office of the heart, he remarks—'First of all, the ear (as the auricle was then called) contracts itself, and in that contraction throws the blood with which it abounds, as the head-spring of the veins, and the cellar and cistern of blood, into the ventricles of the heart.' After its passage through the lungs and body, 'it returns to the heart, as to the fountain or dwelling-house of the body; and there again, by natural heat, powerful and vehement, it is melted, and is dispensed again through the body.' The pulse of the arteries is nothing but the impulsion of blood into the arteries.

Harvey's biographer, Dr Friend, writing on the discovery, observes—'As it was entirely owing to him, so he has explained it with all the clearness imaginable; and though much has been written on that subject since, I may venture to say his own book is the shortest, plainest, and the most convincing of any.' We find the celebrated Boyle, who was contemporary with Harvey, not less candid. He remarks in his philosophical works—'Late experiments having shown the use of the blood's circulation, and of the valves in the heart and veins (which, the famous Dr Harvey told me, gave him the first hint of his grand discovery), we at length acknowledge the wisdom of the contrivance, after it had escaped the search of many preceding ages.'

The extreme care with which Harvey must have pursued his inquiries, may be best understood by what is perhaps the most striking phenomenon in his important discovery—that of the independent motion and life of the blood itself. He noticed the gradual cessation of movement in the ventricles and auricles in dying animals, and goes on to say—'But besides all these, I have often observed, that after the heart itself, and even its right ear, had, at the very point of death, left off beating, there manifestly remained in the very blood

which is in the right ear an obscure motion, and a kind of inundation and beating.'

It might be supposed that a discovery of this nature presented nothing to shock the prejudices, or disturb the interests, of any portion of the community. Yet, as remarked in Wotton's Reflections, 'a great many put in for the prize, unwilling that Harvey should go away with all the glory.' A host of those who are 'always ready to combat facts by reasoning,' fell upon him. He was overwhelmed with contradictions from the learned, and neglected by the public generally; and as soon as his claims were contested, his practice as a physician materially diminished. Such was the acrimony of his opponents, that he was denounced to the king as guilty of improper dissections; an accusation which, had he not enjoyed the favour of the sovereign, might have been attended with fatal consequences, in a day when violent prejudices prevailed against experiments on the human subject. Many asserted that the discovery was nothing new; that it had been known long before: others contended for the honour as due to themselves; and some referred it to Hippocrates, from whom Harvey was said to have stolen it.

The ancients, in reality, knew neither the theory nor the laws of the circulation. They entertained the most absurd ideas on many physiological and anatomical points relative to this phenomenon, and were altogether ignorant of the important part played by the lungs in this great function. The Chinese were said to have been acquainted with the movement of the vital fluid from time immemorial; an assertion which appears to have solely rested on the attention always paid to the pulse by that singular people. Hippocrates is the earliest author who makes any allusion to the subject; he speaks obscurely of the usual motion of the blood and distribution of the veins. Plato represented the heart as a species of divinity, that poured out blood to every member of the body; and Aristotle, who uses the word *arteria* for *windpipe*, speaks of a recurrent motion of the blood, comparing it to the ebbing and flowing of the sea in the well-known channel of Euripus: these opinions were, however, founded on mere conjecture, not on actual demonstration. Galen, who believed that the veins originated in the liver, endows the body with 'three kinds of spirits, natural, vital, and animal, corresponding to the same number of faculties or functions.' The seat of the natural was in the liver, for the growth and support of the body; the vital he assigned to the heart, for the development and carrying about of heat; and placed the animal in the head, as the source of sensation and motion. The arteries were supposed to be nothing more than passages for air or 'spirit,' as after death they were found empty; from which circumstance they derive their name. Cicero, in his treatise, *De Natura Deorum*, has the phrase—'Sanguis per venas, et spiritus per arterias.'

These doctrines prevailed until the time of Servetus, who, better known as a theologian than physician, fell a victim to the religious fanaticism of the Calvinists of Geneva. His writings contain many remarkable facts; among others, a description of the pulmonary circulation, with which it appears he was imperfectly acquainted. His suppositions, however, were not founded on actual experiment. Like Galen, he made the body the abode of three spirits; one of which, the aerial spirit or pneuma, was seated in the heart and arteries. After Servetus, Columbus, a physician of Cremona, threw further light on the circulation through the lungs, yet he remained entirely ignorant of the part played by the arteries. To him we are nevertheless indebted for a description of the uses of the valves of the heart. He was followed by Cassalpinus, first physician to Pope Clement VIII, who held some clear views on the subject; but being continually engaged in scholastic disputes, his allusions to it are, in most cases, incidental and obscure; and notwithstanding his verification of the labours of his predecessor, his works abound in glaring

\* Anatomical Researches on the Motion of the Heart and Blood. Haller called this work *Omnaculum Aërium* (small golden treatise).

† *Sennæ. Traité du Cœur.*



errors. With the exception of applying a ligature, below which he noticed the swelling of a vein, he appears to have added nothing new to the theory of the circulation.

Amid all this ignorance of the true functional action, the wildest speculations prevailed. The heart was taken as an oracle, and its beats were listened to as prophetic. Some contended that the use of the veins was merely to keep the blood in equilibrium, and prevent undue accumulation in any part of the body. Others, again, bewildered themselves with calculations on the power of the heart, and believed that it exerted a force equal to 3,000,000 of pounds; a notion speedily combated by a third party, who proved, to their own satisfaction, that the power did not exceed eight ounces. Although modern science has stripped off these marvellous attributes from what Senac calls 'the material soul of living bodies,' and made it a hydraulic machine, yet we find no less cause for wonder and admiration at its mysterious powers.

To return to Harvey. It was for removing this mass of error, for laying bare the most admirable mechanism the world has yet seen, that he was assailed by the envious and ignorant from every quarter. How well he did his work, we learn from Jenty, according to whom, he, 'with indefatigable pains, traced the visible veins and arteries throughout the body, in their whole progress from and to the heart, so as to demonstrate, even to the most incredulous, not only that blood circulates through the lungs and heart, but the very manner how, and the time in which that great work is performed.' To this 'indefatigable pains' we doubtless owe the six large diagrams, of the size of life, still preserved in the College of Physicians, showing all the blood-vessels of the human body; and prepared with such nicety, as to display distinctly the semilunar valves at the entrance of the aorta, by which he used to illustrate his lectures. The delivery of these lectures, however, involved him in much suffering and loss. In the confusion and riots of the civil war, his house in London was pillaged and burnt, with many valuable papers, whose destruction was irreparable, and caused him constant regret. 'In the eyes of his contemporaries, he was looked upon only as a dissector of insects, frogs, and other reptiles.' And on the authority of Aubrey, we learn that Harvey said 'that, after his book of the Circulation of the Blood came out, he fell mightily in his practice. . . . 'Twas believed by the vulgar he was crackbrained; and all the physicians were against his opinion, and annoyed him.'

The persecution of Harvey appears to have been prompted only by the mean passions of his contemporaries. No other motive is obvious; for it is difficult to see in what way 'the craft' was endangered. In his case, however, as in many others, it almost appeared as if men had some strong personal interest in keeping back the truth, so eagerly did they exert themselves to resist it. Carrere, rector of the academy of Perpignan, wrote a thesis against the doctrine. It was also attacked with great virulence by Dr Primrose, and by Riolan, the celebrated French anatomist. Harvey nevertheless found friends. Folli, physician at the court of the Medici, the first to attempt the transfusion of blood, was an ardent propagator of his theory. In his own country, he gained a powerful advocate in Sir George Ent, who published a book in his favour. The 'momes and detractors' were also replied to in temperate language by Harvey himself. He says—'I think it a thing unworthy of a philosopher, and a searcher of the truth, to return bad words for bad words; and I think I shall do better, and more advised, if, with the light of true and evident observations, I shall wipe away those symptoms of incivility.' To those who taunted him with being nothing more than a dissector of insignificant reptiles, he replied, with as much truth as impressiveness, 'If you will enter with Heraclitus, in Aristotle, into a work-house (for so I call it) for inspection of viler creatures, come hither, for the immortal gods are here likewise; and the great

and Almighty Father is sometimes more conspicuous in the least and most inconsiderable creatures.'

Harvey attended the king in his journeys during part of the civil war, and was present at the battle of Edgehill. He afterwards retired to London, in the neighbourhood of which city he passed the remainder of his days. In his seventy-fifth year he built and endowed a library and museum for the College of Physicians. He died in June 1657, at the age of seventy-nine, but not before the truth of his doctrines had been generally recognised; and his own professional brethren were proud to do him funeral honours. He was buried at Hempstead, where a handsome monument, surmounted by a marble bust, was placed over his grave by the College of Physicians. It was said of him that 'his candour, cheerfulness, and goodness of heart were conspicuous in his whole life, as well as in his writings, and exhibit a worthy pattern for future imitation; and that one of his noblest characteristics was love for his profession, and a desire for the maintenance of its honour.'

What a striking commentary do these facts afford on the ignorance and selfishness of society! How easily have the many suffered themselves to be led by the interested few, whose motives were too often of the most despicable character. This is the more to be wondered at, as experience, if not policy, might have dictated the question, *cui bono*? How was this answered in Harvey's case? Hobbes says of him, he 'is the only man I know, that, conquering envy, hath established a new doctrine in his lifetime'—and yet twenty-five years elapsed before this was accomplished. For a quarter of a century had this great truth to struggle against the malice, jealousy, and stupidity of its enemies, who denied the discoverer's claim to originality, with as little reason as those who disputed Galileo's discovery of Jupiter's satellites, on the ground that a Dutchman had previously invented a telescope. Mankind, however, have always been prone to persecute new truths; whether they shall continue to do so, depends greatly on the present generation.

Harvey's reputation has now nothing to fear. The circulation of the blood is universally admitted to be the first great discovery after the promulgation of the Baconian method; and though giants in mind have lived since, with all the facilities which use and example in the inductive method have given, only one greater and more complete discovery—the discovery of gravitation—has ever been made.

#### LOVE-LETTER EXTRAORDINARY.

WHAT a charming sight is a little corner of a fly's wing when one looks upon it with the aid of a microscope! How perfect in design—how dainty in detail—how glorious in effect! One hangs with rapture over the examination of its beauties. But just for a moment lift away the microscope, and lo! a dead, thin, distorted insect, than which scores of plumper, prettier specimens buzz hourly upon every window-pane in one's house. Now, thousands of people have made this remark, and yet, perhaps, it has never occurred to any of them that Cupid has just such another microscope of his own; and thus we bring it home to him. Who ever fell in love with a whole woman at once? No man: the task would be superhuman. Every man's heart is caught, after its own weakness, by some particular charm, which, as ladies say, 'grows upon him.' For example—Brown, Jones, and Robinson, are rivals for a girl's affection: but examine their respective admirations a little closely, and they shall not be rivals at all. Her ringlets have entangled one of them, her little foot has walked into another, and her figure has added a third to her admirers. The gentleman who used to write sonnets to his mistress's eyebrow (and only one of them) was a

genuine type of your true lover; so enamoured of his own one beauty, that he cannot for a moment divert his eyes to any other district of his lady's charms. This is a law of nature: it is, in fact, Cupid's microscope; very much developing something somewhere, and shutting quite out of sight everything anywhere else. And to show its universality, witness the cheerful complacency with which the dear creatures themselves crouch in the tenderest attitudes under the displaying glass of their exhibitor; it is the whole art of love in woman. Unhappily, the crisis comes when Hymen smashes the lens at the church door (on the way out), or when Cupid himself, pocketing the whole contrivance, flies away to show off his science again in the same manner upon some other couple.

Now, to us it is a touching thing to see young folks going about falling in love with each other after this fashion, for qualities to which they will be less than insensible in a fortnight after their honeymoon. Unluckily, we can see no help for them. People in love can't be expected to listen to reason; they may perhaps be accessible to it after marriage, but then it is only an aggravation; no longer a remedy. The only plan we can suggest, is to pitch good advice into them *before they fall in love* by some sort of 'contingent hints on courtship and matrimony,' or 'prospective precautions about sweethearts, addressed to heart-whole bachelors.' In this age of handbooks, such titles would be worth any money to an enterprising publisher. At present, however, we have concocted and struck out *only* the titles, and as we have not the slightest idea of going any further with the undertakings, we just register them here 'provisionally.'

Next to not being disappointed at all, perhaps the greatest satisfaction in the world is to have a good right to be disappointed. Now, the man who recklessly resigns his heart without specifying its weaknesses, has no more reason to complain of its subsequent injuries, than he who suffers his housemaid to 'dust' his mantelpiece, or who sends glass anywhere by carriers without instructing them as to which 'side up, with care.' In order, then, to establish before wedlock the right we speak of—in order, as it were, to unlock his heart, and leave the key in it, before he knows to whom he shall part with it—we can imagine some young bachelor, foreseeing the altar, addressing to her whom time reserves for him a letter of preliminary candour. To be sure he can't send the letter, because he doesn't know where to direct it. He is equally ignorant of the lady's name and of her number. But we—we will make sure of its reaching the right individual, by placing it before the world—as follows:—

'To ————'

'MADAM—Permit me to request your serious attention to a few remarks, of a very peculiar nature, from one who is at present a total stranger to you. But first, as it is just possible that you may consider I presume considerably in thus addressing you, I will try to excuse my freedom. The fact is, that you and I are going to be married—some of these days. Yes, madam, although I am the last man that would force his attentions on a lady, I feel I must be your husband. You intend to marry when you shall receive an eligible offer? Very well; you will receive such an offer. I shall make it. I shall not be able to make it to anybody else. You will turn it over in your mind a long time, but you will—you must accept it at last. It is not in us to help it: man and wife we are already—not yet united, it is true, but still some day to share, like a pair of unconsciously-associated soles, a mutual fate. It is not, then, very premature in us now, while we are still in the chrysalis of celibacy, to begin to think of each other, and

to try to fan the wings of inevitable wedlock for a pleasant flight together—is it, dear?

'You are very pretty, I'm sure (I shall call you an angel some day, so don't be precipitate); but I hope that, when I fall in love with you, you will not think it necessary to show me how very lovely you are by demonstrating what a beauty you are thought by all the young fellows of your acquaintance. You will make me ineffably happy by marrying me; but I trust you will not seek to aggravate my gratitude by acquainting me with all the very numerous offers you will have had from richer and handsomer men than I am—all of which, no doubt, your dear mamma will have been most anxious for you to accept in preference to mine. I shall love you to distraction, and you will reciprocate my passion (probably after the manner of Mr James's heroine in his next novel but thirty); but I beg you will not permit your imagination to invest me with the peculiarities of any exile, or bandit, or cavalier of the fifteenth century, because such impressions must lead only to your disappointment and my subsequent depreciation in your eyes, as I assure you I have not the slightest element of any such gentleman in my composition.

'When you find yourself for the first time at the head of a household, though never so humble an one, you will very naturally be overcome with a delightful responsibility in the cares of your little queen. Judging from my present circumstances, I think that, "when we marry," we shall probably afford "an eight-roomed house, genteelly furnished." But the path of youth should ever be upward; and I trust and expect, at no distant period, to remove you to a "twelve-roomed ditto, luxuriously." Therefore I hope that, in our first nest, your callow housewifery will not proceed with uncomfortable thrift to envelop our looking-glasses in yellow gauze; pop our bell-ropes into long striped bags; disguise our chairs in mysterious dominoes; and make me walk over my domestic hearth upon raw brown Holland. I hate to see people's "genuine effects" so muffled: it reminds me of the way tradesfolks have of wrapping up one's copper change.

'As young ladies go now-a-days, it is very likely that your disposition, my love, may be overwhelmingly "serious." Some women have religion always in their mouths, as if it was a voice lozenge. If so—be it so. Mine shall never be the bed of a Procrustes, seeking to stretch his wife's conscience. Perhaps if I jerk a button from my wristband on a Sunday morning, your piety will forbid you to stitch it on again. Then never fear a consequent rebuke from me. I, rather than engage in a controversial discussion with my wife about my buttons, would with the greatest cheerfulness—wear studs.

'One of the proudest prerogatives of female matrimony is what ladies call "mutual confidence." But if, in your notion of this privilege, you should expect me, in my usual-up evenings, to pour into your bosom my troubles and anxieties in "the city," and, in return for your sympathy, to share with you the annoyances of housekeeping—if you should repay my confidence, in the matter of my best friend's bankruptcy, with a particular account of an "extravagant shoulder of mutton," in which bone unconscionably preponderates over meat—if, when I try to explain to you my current position in a lawsuit, you should interrupt me with your just vexation that your maid has mimicked in gingham what you invented in satin—in such a case I must beg that we keep our separate trials quite separate. We might as well exchange with each other the umbrella and the parasol, the peacost and the patten, as expect to find shelter in such ungenial comfort. So much for our troubles. Let us, however, be always unanimous in our pleasures: let us enjoy everything together; with this especial precaution—that there is always enough for both of us to enjoy.

'I own I could wish that, until we marry, you should have some regular occupation: but of course, as you are a lady, you would blush at the idea of earning your bread. Nevertheless, I hope you will never have the unfeeling vanity to wince at the name of my trade—even though it should involve an apron—as if it were a thing not to be admitted before company. For you will meet, my love, much stylish company in London, whose tools of business are Shylcock's own knife and scales, yet who would shudder at the imputation of a yard-measure or a canister. But be sure, the tradesman's wife who loves such company, hears daily baser metal rung upon her dinner-table than ever her husband nails to his counter in Cheapside.

'And now, my dearest girl that shalt be, pardon my

audacity if, as I bend my mind's-eye into the vista of futurity, a little past the altar I perceive the cradle. Yet why not? The tree of our love, though now but an acorn, must shoot and blossom, and then—only think of the branches! With our little ones (bless 'em), even from their coral, let us do nothing without a purpose. Wise men say that the mind of a child resembles a sheet of white paper. It is then a parent's duty to be sure that the guiding-lines he traces on that sheet of paper are always ruled in the right place. The world has a very harsh way of rubbing out false impressions.

I drop my pen. Good-by, my love, *au revoir*. This letter is as ingenuous as the next I shall write to you will be silly and incredible. Nevertheless, I am afraid you will like the other best. Your devoted,

THOMAS RINGDOVE.

## AN EASTER RAMBLE IN THE NETHERLANDS.

### THIRD ARTICLE.

COMMERCIAL PROSPERITY OF ANTWERP—THE DUKE OF ALVA'S ATROCITIES—HIS STATUE, AND THE BRONZE CRUCIFIX—THE CHURCH OF THE JESUITS—A GOSPIING CICERONE—THE CALVARY—MENDICITY IN CATHOLIC CHURCHES—THE ANTWERP ACADEMY—RUBENS'S FAMOUS PICTURE—HIS DEATH AND FUNERAL—HIS DOMESTIC HABITS.

IMMEDIATELY above the grand door of the Antwerp cathedral is a bronze crucifix, the history of which is somewhat curious, as it was cast from the metal of the statue which the infamous Duke of Alva ordered to be erected of himself in the citadel. When the Emperor Charles V. resigned his imperial diadem, his son, Philip II., on ascending the throne of Spain, found the Netherlands in an affluent and prosperous condition. In this small portion of his vast dominions he could enumerate three hundred and fifty cities surrounded by walls, and about other three hundred open towns, which were all wealthy and populous. Among them Antwerp, from its immense dealings in the woollen and cloth trade, was considered to be 'the great mart' and 'pack-house of Europe'; frequently, as we have already premised, as many as two thousand five hundred vessels were seen at the same time anchored before the town, and three or four hundred vessels came up with one tide into the Scheldt. We are also informed that two hundred wagons came daily into the town, loaded with passengers from the neighbouring provinces; nearly one thousand of whom—French, German, Italians, and other foreigners—arrived weekly. Furthermore, it is stated that one hundred thousand country carts were continually employed carrying goods to and from the city. Thus did Antwerp not only become rich itself, but contributed to enrich other towns in the Netherlands; in the midst of all which opulence, every branch of the fine arts was assiduously cultivated. The wealth of the bishops and priests, and the zeal of all classes of people to see their churches embellished with the finest works of art, created an immense demand for pictures on sacred subjects. Nor was the sister art, music, neglected. On the contrary, Gulciardini states that Flanders then supplied all Europe with musicians, just as Italy does at present.

Such was the prosperous state of these towns when the Duke of Alva was appointed by Philip II. commander-in-chief of the armies in the Netherlands. He was then sixty years of age, and had the character of being a haughty, morose, severe soldier. He no sooner entered upon his odious mission, than he revealed to the consternation of the people, the unlimited authority with which he was vested; and which extended not only over every department of the army, but over the judicial institutions of the country. The most gloomy apprehensions now became too soon realised. He established the Inquisition, as it already existed in Spain, with all its attendant and secret horrors; he confiscated, on frivolous pretexts, the estates of the nobles and the property of rich merchants; and imposed upon the industrious classes the most heavy and vexatious imposts. Finally, he abolished the office of the ordinary judges, and delegated their duties to a tribunal

of twelve counsellors, nominated by himself, who, with the sanguinary Vargas as their president, sanctioned, with the mock solemnity of a pretended trial, his secret, tyrannous instructions. The Duke of Alva himself boasted that, during less than six years of his sovereignty, he had caused more than eighteen thousand persons to perish by the executioner. Here the reader may naturally enough be curious to know what could have been the design of a monument erected to the honour of so execrable a tyrant. Accordingly, we find it was executed under his own immediate orders, and doubtless intended as much to intimidate the inhabitants, by reminding them of the inordinate power he wielded over them, as to gratify his own insensate ambition. He was represented, according to Mayer, as Duke of Alva, in a menacing attitude, treading with one foot on the neck of an image representing the rebellion of his subjects, and trampling with the other upon the neck of another image, intended to represent expiring Protestantism. Around the pedestal was a baso-relievo, which represented the citizens in supplicating postures, with the wallet and porringer suspended round their necks, to imply the most abject and humiliating submission to his authority. Such is the account we have been enabled to gather of this memorable statue, which, when destroyed by the successor of Alva, with the view of conciliating the town, was, strange to say, melted down into the crucifix which is now seen above the cathedral door.

We went in the afternoon to the church of the Jesuits, the vast interior of which was so crowded, that we could scarcely wedge our way through the dense congregation into the nave. As a specimen of Rubens's talents in a line apart from that in which he gained his fame, the architecture of this church has a claim to attention. Injured as it has been by lightning, we still recognise in it the genius of the great artist. Finding that we could not obtain seats, and being inconvenienced by the crowd, we left the church of the Jesuits, and proposed going to St Paul's; and as, for this purpose, we were descending the flight of steps under its portico, we observed an intelligent young woman also leaving the Jesuits, of whom we inquired our way. We were glad to find that she understood us, and spoke good English; for in the streets of Antwerp, and other towns in Belgium, the chances are, that in accosting a passenger to make any such inquiry, the return made will be a shake of the head, accompanied by a jargon half Dutch, half French, half Walloon, which is utterly unintelligible. We were, however, on this occasion more fortunate; for she with much good-nature replied that she lived close by St Paul's, and would, if we permitted her, accompany us. We availed ourselves of her offer; and as we walked along, she observed that the church of the Jesuits was always crowded, for 'notwithstanding,' added she with much animation, 'all that has been said against them—and they have been a persecuted race—they are, at least in Antwerp, a good people.' 'And how so?' we inquired. 'Because,' answered she, 'they are so charitable to the poor; they will do almost anything for them: many of them will even look to the education of their children: and whenever any affliction happens in their family, the poor people always advise one another to seek out some "bon père Jesuit," from whom they are certain to obtain relief.' Thus did our gossiping cicero, who decanted fluently enough on their merits, unconsciously hit upon the great secret which explains the influence of the Jesuits throughout Europe. The success of their missions when Francis Xavier was performing miracles, and pouring the water of baptism over the heads of the converted infidels in the East, may have contributed greatly to their progress; but the mainspring of their enormous power must be referred to their having made education—comprehensive and liberal education—one of the leading features of their institution. Hence all men of learning must be constrained to acknowledge how deeply we are in-



debted to them for the advancement of both literature and science; and some speak of their order with as much zeal as our cicerone herself. Thus the late Robert Southey remarks, in one of his letters to William Taylor of Norwich. 'Hating, as I do, popery *ex intimo corde*, I am a great admirer of the Jesuits;' and with these and other associations connected with their very remarkable history crowding upon our mind, we arrived at the church of the Dominicans, dedicated to St Paul.

Before entering this church, we were shown through a little latch door, opening into a place called 'the Calvary'—a small plot of apparently garden-ground, covered with a motley collection of the statues of patriarchs, prophets, and martyrs, all heterogeneously huddled together, like so many figures in a sculptor's yard, without any regard to proportion, arrangement, or consistency of design. Immediately before us, upon a mass of small round stones, walled up to a considerable height, was a clumsy piece of sculpture-work, exhibiting the crucifixion, with figures above, below, and around, which we abstain from describing. Underneath this unseemly pile was the most horrid part of the spectacle, which pretends to be a model taken from Jerusalem of the holy sepulchre. Upon entering a narrow opening, intended to represent a chasm in the rock, we found ourselves before an iron grating, which rails in a recess, upon the floor of which is a coffin, covered over with a white sheet, through which the hand apparently of the dead body is protruded. The walls of this cavernous-looking place were covered with figures in different attitudes, with their faces glaring with coarse red paint, to depict the tortures of the wicked in purgatory. Before this hideous scene we found kneeling against the railing a man and woman, who we might have imagined were gazing devoutly on the object before them; but as we hastily withdrew, somewhat disgusted with so profane an exhibition, they suddenly rose from their devotions, and followed us. The woman, dropping her rosary of huge black beads, held out her hand for charity; while the man, hobbling after her—for he was lame—begged with all the loquacious pertinacity of an old adept in the trade. The mendicency which is permitted within and around these Catholic churches always appears to us to be a reproach upon the authorities, encouraging and sanctioning as it does not only the vice of idleness, but the still deeper sin of hypocrisy. The toleration of such a practice is unaccountable, unless it be regarded as a remnant of that old system under which the opportunity of being charitable was as much imposed upon individuals piously inclined, as the doctrinal virtue of charity itself. Hence, in former ages, many of the pious monarchs of France were proud to see a retinue of beggars following at their heels when they walked abroad; and, as an evidence of still deeper humility, admitted them to feast at the royal table. Washing the feet of the poor, in imitation of our Saviour, was another ostentatious ceremony performed by sovereigns, for the purpose of showing their subjects an example of Christian humility. But we learn from the chronicles of these times how greatly all this mistaken zeal was abused, and that the encouragement so awarded to mendicency led to all sorts of petty larceny and crime. The distribution of the royal bounty on Maunday-Thursdays in England, is the last vestige we retain of these Catholic customs; for, as population has increased, and people have become enlightened, it is found that the exigencies of society provide employment as a common duty of life for the humblest individuals; so that indiscriminate charity, however well-intended, instead of covering, too frequently gives rise now-a-days to, a multitude of sins. However, there are yet on the continent infirm and aged persons who, with the consent of their priests, look for no other support excepting the chance donations they may obtain at the doors of these churches; and doubtless such charities are frequently given in the very same spirit which in former ages

enriched the shrines and altars, and augmented to so enormous an extent, the revenues of the church. The vesper service was already concluded when we entered St Paul's; and as it was, for the season of the year, a precocious summer evening, we drove around the town and the ramparts, and along the banks of the Scheldt. When we associated the scene which now came under our review with the past history of the Netherlands, how wonderful appeared the contrast! The broad and navigable river Scheldt was still flowing on as rapidly and unchanged as when thousands of vessels lay floating round the city, which now presented to us the solitary aspect of only three merchant vessels anchored off its port.

The academy of the Fine Arts is one of the principal attractions of Antwerp. Its exhibition is in a gallery of small extent in the museum—a plain-looking building, which occupies the site of an ancient convent, and is enclosed in a small garden. Here, as might be anticipated, we find many of the finest specimens of the Flemish school, including several Vandykes, and twelve of Rubens's most famous compositions. The most remarkable picture in this, or perhaps in any gallery in Europe, is Rubens's *chef d'œuvre*—the crucifixion of our Saviour between the two thieves. It is a startling, a wonderful production. The time chosen by the artist for the representation of this awful and affecting scene is the evening of that melancholy day. The three crosses are arranged somewhat in perspective, the middle one being that upon which, meek and composed, hangs the body of our Saviour, whose head is dropped upon his chest, as if he had just yielded up the ghost. Immediately before, and a little to the right of this—the centre of all interest—are two soldiers on horseback, one leaning with his elbow on his saddle-bow, looking up with earnestness at the suffering Redeemer, while the other is in the act of piercing his side with a wooden steel-pointed spear, which looks visibly bending under the weight of the thrust. To the left, next to the Saviour, is the cross upon which suffers the unbelieving malefactor; and this is a truly horrid representation of physical agony. The unhappy wretch appears to have torn one foot from the nail that fastened it, and his body is seen writhing up in convulsions against the fatal tree, while the cruel soldier, to increase his torment, is breaking his limbs with a bar of iron. Every muscle is corugated and bulging out into a state of the most dreadful spasm and contraction. Contrasting with this, on the opposite cross to the right, is the penitent thief, looking up towards the Saviour with an expression of resignation, as if imploring forgiveness. In the foreground, the effect of the whole scene is heightened by the group of mourners, whose sufferings appear to be concentrated upon the one object of sympathy and adoration. The disciple John, hiding his face in his mantle, leans as if weeping on the shoulder of Mary, the wife of Cleophas; while the virgin mother looks upwards to her crucified Lord with eyes red with weeping. Behind these figures, at the foot of the cross, the Magdalen is seen as if starting forwards with a countenance of horror, stretching out her hand as if to implore the mercy of the horseman with his spear.\* Sir Joshua Reynolds declares this profile to be the finest he ever saw by Rubens or any other painter. The effect of this picture is, in the first instance, terrible. The spectator cannot look upon it at first without a shudder; but as he examines and begins to study its details, he becomes rivetted to the spot. In the adjoining division of the gallery is the famous altar-piece by Quentin Matsys, representing the Virgin and the disciples assembled to receive the Saviour after the descent from the cross. The colouring is exceedingly fine; but the leaden, cadaverous complexion of the body, and the lifelike gash in the side, produce, to our apprehension, a very unpleasant and painful effect. Indeed in this

\* This group is taken from the account given by St John—chapter xix. verse 36—of the attendants which stood by the cross.

collection, as well as in many other galleries, not excepting the Louvre, many pictures are exhibited on sacred subjects the designs of which are peculiarly offensive. It is not right that the sublime mystery of the incarnation should be reduced to the delineation of a common earthly tragedy, nor that the divine character of our Saviour should be impersonated in the most ordinary forms of suffering humanity. The visitor on the continent has too often reason to turn away, tired at the sameness, and shocked at the extravagance, of these very disagreeable representations.

'A journey to Antwerp,' says Emerson Tennant, 'is a pilgrimage to the shrine of Rubens.' It is so: and here, in the very beautiful church of Saint Jacques, immediately behind the high altar, is the small chapel which formerly belonged to his family, and which is now their consecrated mausoleum. On the 30th May 1640, Peter Paul Rubens died, and the obsequies which attended his remains to this their last resting-place were performed with the most imposing solemnity. The surrounding walls and aisles were hung with black cloth, and the clergy belonging to the church walked in advance of the funeral procession. Next came sixty orphan boys, two bearing a crown of gold, followed by others carrying lighted tapers in their hands; and then the coffin, surrounded by the more immediate relatives and friends of the deceased. The chief officers of the city, many noblemen of distinction and merchants, and all the members of the Academy of Painting, attended; and in the midst of this vast assemblage, while the requiem for the dead was being chanted, his body was lowered into the vault before us, which now contains all that may yet remain of that dust which is 'even in itself an immortality.' Nor does it sleep there alone; for on each side are deposited also the remains of the two dear companions who were the chosen partners of his life. Looking through the rails which divide this sacred spot from the aisle at the back of the choir, we behold a plain white marble altar, over which is one of his own most beautiful paintings, representing the Virgin Mary and infant Saviour, with the adoration of Saint Bonaventura. In this singularly effective picture, the colouring of which, says Sir Joshua Reynolds, 'is yet as bright as if the sun shone upon it,' he has introduced the portraits of his two wives, his father, his grandfather, and himself in the character of Saint George, in compliment to King Charles I., who conferred on him, when in England, the honour of knighthood. The life of Rubens is singularly interesting. He lived in an eventful age; and while, as a diplomatist, he enjoyed the friendship and confidence of kings and princes, as a private individual he was respected and esteemed by all classes of society. His habits were frugal; his diligence extraordinary; and nothing can inspire us with a more favourable idea of his disposition, than his conduct towards other artists. His doors were open to them at all hours, even when he was himself at the easel; and although he seldom paid visits, he was ever ready to inspect the work of any artist who wished his advice, and often would take up the brush himself to touch such parts as required it. In every picture he sought to discover something good; for it was his great delight to acknowledge the merits, and encourage upon every occasion his brother artists. He used to rise very early—in summer at four o'clock in the morning; and immediately afterwards attended mass. He then went to work, and while painting, employed a person to read to him from one of his favourite classical authors; for he was an excellent scholar, and delighted in Flutarch, Livy, Cicero, and Seneca, which, with Horace and Virgil, were his favourite authors. An hour before dinner he devoted to recreation, which consisted chiefly in conversing with visitors, who, being aware of his habits, knew at what hour their company would be agreeable to him. He indulged sparingly in the pleasures of the table, and drank but little wine. After working again until the evening, he usually rode out for an hour or two. He was extremely fond of horses,

and his stables generally contained some of remarkable beauty. On his return home, it was his custom to receive a few friends, principally men of learning, or artists, with whom he shared his frugal supper meal, and passed the evening in instructive and cheerful conversation.\* Such were the domestic habits of this illustrious artist, the details of whose life cannot be perused without conveying a lively conviction of the truth of the observation, that when industry is allied with genius, men may command success, and often attain the highest honours of the state.

#### THEORIES OF THE FORMATION OF COAL.

It is a custom of the Geological Society for the president annually to deliver an address, containing a summary of the progress of the science for the preceding year. The last address of this kind, delivered in February 1846 by Mr Leonard Horner, has been published in the *Quarterly Journal of the Geological Society*. We find in it a highly intelligent view of one of the obscurest departments of geology—the formation of coal. 'It is scarcely possible,' says Mr Horner, 'to visit a coal-field, or to read the description of one, without being led to theorise on its mode of formation. The origin of coal has long been a subject of great difficulty; nor has any theory been yet advanced with which it has been possible to reconcile all the appearances which the coal-measures exhibit, all the variety of forms in which coal is found. Indeed the more closely we examine the phenomena, the more do we feel the distance we are from a satisfactory explanation of them. According to some geologists, coal-seams and their accompanying strata are accumulations of land-plants and stony detritus, carried down by rivers into estuaries, and deposited in the sea, where the vegetable matter undergoes changes that convert it into coal. Others are of opinion that coal is the altered residuum of trees and smaller plants, that have grown on the spot where we now find them; that the forests were submerged and covered by detrital matter, which was upraised to form a foundation and a soil for another forest, to be in its turn submerged and converted into coal, and that thus the alternations which the vertical section of a coal-field exhibits are to be accounted for.

'In the geological works of the last year, we find the former theory maintained by Sir R. Murchison as most generally applicable; Mr Lyell is more inclined to adopt the latter. Sir R. Murchison dwells upon the facts of the alternations of coal with limestones containing marine remains, which are so frequently met with in most countries where coal-fields prevail; and as a striking instance of this, he refers to the Donetz coal-field. A remarkable example of a similar kind, occurring in Maryland, is mentioned by Mr Lyell. At Frostburg a black shale, ten or twelve feet thick, full of marine shells, rests on a seam of coal about three feet thick, and 300 feet below the principal seam of coal in that place. The shells are referable to no less than seventeen species, and some of them are identical with, and almost all the rest have a near affinity to, species found in the Glasgow and other coal-measures.

'The theory which refers the coal to trees and plants which have grown on the spot where it now rests, is illustrated by Mr Lyell by observations he made in Nova Scotia, on the south shore of the Bay of Fundy, at a place called "The Jogging." He states that there is a range of perpendicular cliffs, composed of regular coal-measures, inclined at an angle between twenty-four and thirty degrees, whose united thickness is between four and five miles. About nineteen seams of coal occur in the series, and they vary from two inches to four feet in thickness. The beds are quite undisturbed, save that they have been bodily moved from the horizontal position in which they must have been deposited

\* See Rubens's Life, by Waagen. Edited by Mrs Jamouss. London: 1840.

to that inclination they now have. In these coal-beds, at more than ten distinct levels, are stems of trees, in positions at right angles to the planes of stratification; that is, which must have stood upright when the coal-measures were horizontal. No part of the original plant is preserved except the bark, which forms a coating of bituminous coal, the interior being a solid cylinder of sand and clay, without traces of organic structure, as is usually the case with *Sigillaria*, and like the upright trees in the coal-measures cut through by the Bolton railway. The trees, or rather the remains of stems of trees broken off at different heights above the root, vary in height from six to twenty-five feet, and in diameter from fourteen inches to four feet. There are no appearances of roots, but some of the trees enlarge at the bottom. They rest upon, and appear to have grown in, the mass which now constitutes the coal-seams and under-lying shale, never intersecting a superior layer of coal, and never terminating downwards out of the coal or shale from which the stem rises. The underclay or shale often contains *Stigmaria*. Here, then, he states, are the remains of more than ten forests, which grew the one over the other, but at distant intervals, during which each, from the lowest upwards, was successively covered by layers, of great thickness, of clays and solid stone, the materials of which must have been arranged and consolidated under the surface of water, and the vegetation of every layer in which the upright trees are fixed must have grown on land.

'The formation of coal-measures like the above, and of all others where there is evidence that the vegetable matter was not drifted to the place it now occupies, but must have grown on the spot, is then accounted for by supposing that the land sank below the level of adjoining water; that gravel, sand, and mud were washed down from the land that did not sink, and formed layers of clay and sandstone over the submerged forest, either in sufficient quantity to rise to the surface of the water, and form land for the next forest, which was submerged in its turn, or that a contrary internal movement took place, which again raised the submerged land; and that for every seam of coal, one above the other, a similar series of changes must have taken place. It is to this oscillatory movement that Mr Lyell ascribes the formation of the above remarkable phenomena in the Bay of Fundy, and others of a like nature.

'At first sight, both theories seem well-founded, when applied to the particular coal-fields described; and it is possible that these eminent and experienced geologists may be of opinion that both are true, as applied to different situations. But I see great difficulties to the full acceptance of either in many of the phenomena which, on a close examination, we find coal-fields generally present.' Mr Horner then refers to several recently-published sections of coal-fields. One in South Wales presents *eighty-four* seams of coal from one inch to nine feet thick, alternating with 340 beds of sandstone, slate, and clay. In this case, the group of coal-bearing strata is a mile in thickness. A coal-field in Nova Scotia is of twice this thickness, and contains *seventy-six* coal-seams. Mixed with the latter are a few limestones containing bivalve shells. The learned president then proceeds—

'Throughout the whole 7000 feet in the South Wales section, and if the limestones are, as is most probable, of fresh-water origin, also throughout the 14,570 feet in the Nova Scotia section, there appears to be no trace of any substance of a *marine* character; and from anything exhibited in the composition of the beds, all might have been deposited in fresh water. It seems infinitely improbable, had the deposition taken place in a sea, that a series of accumulations of this description, implying, be it observed, a vast duration of time, with different depths and different qualities of sea-bottoms, should have taken place without a trace being discoverable, either upon the surface of the submerged layers of vegetable matter, or in any part of the clays and sandstones that lie upon them, of a marine

animal or plant. It seems no less improbable that, in a sea-skirting shore, there should be such an absence of agitation throughout so vast a space of time, as to allow a tranquil deposit of layers of fine detritus over a wide area, a spreading-out of the leaves of delicate plants in layers of clay and sand like the specimens in a herbarium, and a gradual and insensible passage, in many instances, from one bed into another. Great as the North American lakes are, I am not prepared to say that grave objections may not be urged against the probable existence of such vast bodies of fresh water as would be of sufficient extent and depth to receive the beds of many coal-fields; but the absence of marine remains throughout vast depths of strata in coal-fields is a remarkable fact, well deserving of the most careful investigation.

'That the terrestrial vegetable matter from which coal has been formed has in very many instances been deposited in the sea, is unquestionable, from their alternations with limestones containing marine remains. Such deposits and alternations in an estuary at the mouth of a great river are conceivable, but whether such enormous beds of limestone, with the corals and molluscs which they contain, could be formed in an estuary, may admit of doubt. But it is not so easy to conceive the *very distinct separation of the coal and the stony matter, if formed of drifted materials brought into the bay by a river*. It has been said that the vegetable matter is brought down at intervals, in freshets, in masses matted together, like the rafts in the Mississippi. But there could not be masses of matted vegetable matter of uniform thickness 14,000 square miles in extent, like the Brownsville bed on the Ohio; and freshets bring down gravel, and sand, and mud, as well as plants and trees. They must occur several times a-year in every river; but many years must have elapsed during the gradual deposit of the sandstones and shales that separate the seams of coal. Humboldt tells us (*Kosmos*, p. 295) that in the forest lands of the temperate zone, the carbon contained in the trees on a given surface would not, on an average of a hundred years, form a layer over that surface more than seven lines in thickness. If this be a well-ascertained fact, what an enormous accumulation of vegetable matter must be required to form a coal-seam of even moderate dimensions! It is extremely improbable that the vegetable matter brought down by rivers could fall to the bottom of the sea in clear unmixed layers; it would form a confused mass with stones, sand, and mud. Again, how difficult to conceive, how extremely improbable in such circumstances, is the preservation of delicate plants, spread out with the most perfect arrangement of their parts, uninjured by the rude action of rapid streams and currents carrying gravel and sand, and branches and trunks of trees!

'In the theory which accounts for the formation of beds of coal by supposing that they are the remains of trees and other plants that grew on the spot where the coal now exists, that the land was submerged to admit of the covering of sandstones or shale being deposited, and again elevated so that the sandstone or shale might become the subsoil of a new growth, to be again submerged, and this process repeated as often as there are seams of coal in the series—these are demands on our assent of a most startling kind. In the sections above examined, we have eighty-four seams of coal in the one, and seventy-six in the other. In the Saarbrück coal-field there are one hundred and twenty seams, without taking into account the thinner seams, those less than a foot thick. The materials of each of these seams, however thin (and there are some not an inch thick, lying upon and covered by great depths of sandstones and shales), must, according to this theory, have grown on land, and the covering of each must have been deposited under water. There must thus have been an equal number of successive upward and downward movements, and these so gentle, such soft heavings, as not to break the continuity or disturb the parallelism of horizontal lines spread over hundreds of square miles; and the



movements must, moreover, have been so nicely adjusted, that they should always be downward when a layer of vegetable matter was to be covered up; and in the upward movements, the motion must always have ceased so soon as the last layers of sand or shale had reached the surface, to be immediately covered by the fresh vegetable growth; for otherwise, we should have found evidence, in the series of successive deposits, of some being furrowed, broken up, or covered with pebbles or other detrital matter of land, long exposed to the waves breaking on a shore, and to meteoric agencies. These conditions, which seem to be inseparable from the theory in question, it would be difficult to find anything analogous to in any other case of changes in the relative level of sea and land with which we are acquainted.

We have here put into italics what appear to us the principal difficulties on both sides of this extremely curious question. The sum of the whole matter is, that there are facts pretty clearly pointing to the processes involved in both theories, while there are other facts as clearly forbidding either process to be assumed as the sole mode of the production of coal. All must agree with Mr Horner that the whole subject of the theory of coal—whether we consider its mode of deposition, the plants out of which it has been formed, or the various changes which the vegetable matter has undergone to convert it into lignite, jet, common coal, cannel-coal, and anthracite, two or more of these varieties often occurring in the same coal-field—is extremely obscure, and presents a wide and interesting field for future investigation.

#### FIVE MINUTES' ADVICE TO LABOURERS AND SMALL FARMERS.

[We find the following in a cutting from an old newspaper, and regret being unable to say who is the author.]

CONSIDER well the importance of habits of frugality, and the necessity of making provision for old age, when, from infirmity and inability to continue daily labour, privation and suffering will surely overtake the improvident. The effects of want in the period of old age, sickness, and infirmity, may generally be averted by industry, forethought, and frugality in the season of youth, health, and strength.

To some persons, the saving of anything may perhaps seem impracticable, but most people know that in this respect more depends upon their own care than upon the amount of earnings; whilst many, who have both the means and the disposition to save, have not acquired the habit of saving, simply because they never made the trial. Let them only make a beginning, and try how many sixpences and shillings can be saved in one year, and the difficulty will vanish; and trust not the savings hardly gained by your labour in the hands of private individuals, nor even in your own keeping. With the former, it may be lost by misfortune, fraud, or extravagance; in the latter, it may be pilfered, or you may be tempted to use a part of it in the hope of again replacing it.

Lodge your savings securely in the savings' bank, and be not tempted, by offers of high interest or great profits, to run risks which may bring you to destitution in your old age. Where is the man who, if in employment, cannot, between the age of eighteen and thirty, save sixpence a-week? and who has ever made the trial in rain, if he set about it earnestly? However backward people may have been to commence saving, and however positive at first that nothing can be saved, there has yet, we believe, been hardly any instance in which the commencement of saving has been entered on, that the person has not gone on adding to the fund, and making increased economical exertions; and such, we are satisfied, will be the case in every instance, if persons will only make the first effort.

Here we might stop, were it not that we feel called upon to say something upon the important subject of the education and training of your children, on rightly conducting which will depend not only their welfare here, but their happiness hereafter.

Commence early with your instruction. A mother is capable of teaching her child obedience, humility, cleanliness,

and propriety, whilst it is yet almost an infant; and it is delightful to think that the first instructions can thus be communicated by so tender and natural a teacher. Remember that it is by combining affectionate tenderness with firmness in refusing what is improper, that you secure your children's happiness; and if they are early trained to be docile and obedient, the future task will be comparatively easy.

Education must, however, be always regarded but as the means to an end; for all acquirements are useless, unless they make us better in our relations as parents, children, husbands, wives, and unless they lead us to the practice of that divine precept of our religion, 'Thou shalt love thy neighbour as thyself.'

Let us suppose, then, that you have secured the benefits of a good education for your children—that they have attended an infant, and afterwards an adult school—that they have been advanced in the different branches of instruction, as far as is necessary for the pursuits in life to which they are destined—still, are you not called upon as parents to take care of their moral training? Is not something yet required of those to whom an offspring has been given? Is there not danger, even after the best precepts have been imparted, that your children may risk being corrupted by your own example?

If you suppose that your vices can be hidden from your children, you are greatly mistaken; for the quickness of perception in children enables them immediately to see through such deception. If, with the words 'Thou shalt not steal' in your mouth, you nevertheless overreach, or make use of anything not your own, or take undue advantage of others, you are practically teaching your children to be dishonest. Can you expect them to have a horror of drunkenness if they ever see you drunk, or if tipping is talked of by you as an object of gratification? If you encourage your child by promises to confess a fault, and afterwards punish him for it, do you not practically discourage his telling the truth? Or if you hold that nothing is to be told that can injure your own interests, and say 'Remember not to tell,' or 'You must not say so and so,' can you expect that your child will not lie whenever it suits his own purpose? If you are passionate and intemperate in your language, overbearing or insolent, will not your children be infected by your example? And are you not crushing in the bud the truly Christian qualities of gentleness, forbearance, and charity?

It has been well said that 'drunkenness expels reason, distempers the body, inflames the blood, impairs the memory, is a thief to the purse, a beggar's companion, a wife's woe, and children's sorrow.' You must abstain from this vice altogether if you wish to train your children up to a proper fulfilment of their duties here, and to secure their eternal happiness hereafter.

There is yet one other subject so closely interwoven with your worldly welfare, that, before concluding, we might slightly touch upon—we mean marriage. The necessity of consideration before engaging in so important a contract as that of marriage, is self-evident; and yet how many hasten to become united for life without at all considering the consequence!

In declaring marriage honourable, it is most certain that Scripture does not countenance the wickedness and folly of entailing strife, sorrow, sickness, and distress upon ourselves and our offspring—on the contrary, it supposes the married state to be one of purity, affection, and increased happiness in all the relations of life.

How common is it to see two individuals marry, and bring beings into the world, without the slightest provision for their support, and whose subsistence, from the very commencement of their union, depends wholly on resources which sickness and a thousand accidents may in an instant destroy! Such persons may shelter themselves under the plea of trusting to Providence; but Providence has given us reason for the regulation of our conduct; and to neglect the admonitions of reason, is to set Providence at defiance. And will the Deity then work a miracle in our favour, to reward us for our folly? Is it a proper reliance on Providence to descend to the level of irrational beings, and cast our offspring upon the world with as little consideration about their future wellbeing as the ostrich shows when she drops her egg into the sand, and leaves it to be hatched by the sun? It is very certain that he who becomes a father without any prospect of keeping his children from the miseries of want and beggary, is guilty of a grievous sin and misdemeanor.

## THE PHILOSOPHY OF A LITTLE CARPET-BAG.

Among the most common of street sights, is that of a gentleman hurrying along towards railway or river, bearing with him a little carpet-bag. So common it is, that it fails to attract the slightest attention. A little carpet-bag is no more noted than an umbrella or walking-stick in a man's hand; and yet, when rightly viewed, it is, to our thinking, an object of no ordinary interest. We feel no envy for the man on whom has devolved the charge of a heap of luggage. The anxiety attending such property outweighs the pleasure of its possession. But a man with a little carpet-bag is one in ten thousand. He is perhaps the most perfect type of independence extant. He can snap his fingers in the face of Highland porter extortionate. No trotting urchin is idle enough to solicit the carrying of so slight a burden. While other passengers, by coach or railway, are looking after their trunks and trappings, he enters, and has the best seat. He and his 'little all' never part company. On arriving at their destination, they are off with the jaunty swagger of uncumbered bachelorhood! In contemplating a gentleman with a carpet-bag, we are struck, to a certain extent, with an idea of disproportion; but the balance is all on the easy side. There is far too little to constitute a burden, and yet there is enough to indicate wants attended to, and comforts supplied. No man with a little carpet-bag in hand has his last shirt on his back. Neither is it probable that his beard can suffer from slovenly overgrowth. When he retires to rest at night, the presumption is, that it will be in the midst of comfortable and cosy night-gear. A little carpet-bag is almost always indicative of a short and pleasurable excursion. No painful ideas of stormy seas or dreadful accidents on far-off railway lines are suggested by it. Distance is sometimes poetically measured by 'a small bird's flutter,' or 'two smokes of a pipe,' or some such shadowy, though not altogether indefinite phrase. Why may not time, in like manner, be measured by two shirts? A gentleman with a little carpet-bag may be said to contemplate about a couple of shirts' absence from home.—*Glasgow Citizen*.

## THE WILD HORSE OF TEXAS.

We rode through beds of sunflowers miles in extent, their dark seedy centres and radiating yellow leaves following the sun through the day from east to west, and drooping when the shadows fell over them.—These were sometimes beautifully varied with a delicate flower of an azure tint, yielding no perfume, but forming a pleasant contrast to the bright yellow of the sunflower. About half past ten we discerned a creature in motion at an immense distance, and instantly started in pursuit. Fifteen minutes' riding brought us near enough to discover, by its fleetness, that it could not be a buffalo; yet it was too large for an antelope or a deer. On we went, and soon distinguished the erect head, the flowing mane, and the beautiful proportions of the wild horse of the prairie. He saw us, and sped away with an arrow-fleetness till he gained a distant eminence, when he turned to gaze at us, and suffered us to approach within four hundred yards, when he bounded away again in another direction with a graceful velocity delightful to behold.—We paused, for to pursue him with a view to capture was clearly out of the question. When he discovered we were not following him, he also paused, and now seemed to be inspired with curiosity equal to our own; for, after making a slight turn, he came nearer, until we could distinguish the inquiring expression of his clear bright eye, and the quick curl of his inflated nostrils. We had no hopes of catching, and did not wish to kill him; but our curiosity led us to approach him slowly. We had not advanced far, before he moved away, and, circling round, approached on the other side. He was a beautiful animal, a sorrel, with jet-black mane and tail. As he moved, we could see the muscles quiver in his glossy limbs; and when, half playfully, and half in fright, he tossed his flowing mane in the air, and flourished his long silky tail, our admiration knew no bounds, and we longed—hopelessly, vexatiously longed—to possess him. We might have shot him where we stood; but had we been starriving, we could scarcely have done it. He was free, and we loved him for the very possession of that liberty we longed to take from him; but we would not kill him. We fired a rifle over his head. He heard the shot and the whiz of the ball, and away he went, disappearing in the next hollow, showing himself again as he crossed the distant ridges, still seeming smaller, until he faded away to a speck on the far horizon's verge.—*Kennedy's Texas*.

## THE WATER-LILY.

BURTHENED with a cureless sorrow,  
Came I to the river deep;  
Weary, hopeless of the morrow,  
Seeking but a place to weep;  
Sparkling on wards, full of gladness,  
Each sun-crested wavelet flew,  
Mocking my deep-hearted sadness,  
Till I sickened at the view.  
Then I left the sunshine golden  
For the gloomy willow-shade,  
Desolate and unbeheldden,  
There my fainting limbs I laid.  
And I saw a water-lily  
Resting in its trembling bod,  
On the drifting waters chill,  
With its petals white outspread.  
Pillow'd there, it lay securely,  
Moving with the moving wave,  
Up to heaven gazing purely,  
From the river's gloomy grave.  
As I looked, a burst of glory  
Fell upon the snowy flower,  
And the leaved allegory  
Learned I in that blessed hour:—  
Thus does Faith, divine, indwelling,  
Bear the soul o'er life's cold stream,  
Though the gloomy billows swelling,  
Evermore still darker seem.  
Yet the treasure never sinketh,  
Though the waves around it roll,  
And the moisture that it drinketh,  
Nurtures, purifies the soul.  
Thus eye looking up to Heaven  
Should the white and calm soul be,  
Glad in the sunshine given,  
Nor from clouds shrink fearfully.  
So I turned, my weak heart strengthened,  
Patiently to bear my woe;  
Praying, as the sorrow lengthened,  
My endurance too might grow.  
And my earnest heart's beseeching  
Charmed away the sense of pain;  
So the lily's silent teaching  
Was not given to me in vain.

D. M. M.

## THE NORMAN CONQUEST.

It is a popular error, as all inquirers know, to characterise the Norman Conquest as a French conquest. The Normans were not French, but a colony settled in that part of France which, as the colonists were north people, originating in Scandinavia, was called by them Normandy, having previously been designated Neustria. In fact, the Normans were cognate in their derivation to the Anglo-Saxons, and under Rollo, a piratical Dane, overran a portion of France, and forced the French monarch, Charles III., to cede Neustria to them. This took place only one hundred and fifty years previous to the invasion of England by William; so that when the Normans came here, they were not without some affinity to the Saxons whom they attacked.—*Mackinnon's History of Civilisation*.

## GRADUAL RISE OF NEWFOUNDLAND ABOVE THE SEA.

It is a fact worthy of notice, that the whole of the land in and about the neighbourhood of Conception Bay, very probably the whole island, is rising out of the ocean at a rate which promises, at no very distant day, materially to affect, if not to render useless, many of the best harbours we have now on the coast. At Port-de-Grave a series of observations have been made, which undeniably prove the rapid displacement of the sea-level in the vicinity. Several large flat rocks, over which schooners might pass some thirty or forty years ago with the greatest facility, are now approaching the surface, the water being scarcely navigable for a skiff. At a place called the Coah, at the head of Bay Roberts, upwards of a mile from the sea-shore, and at several feet above its level, covered with five or six feet of vegetable mould, there is a perfect beach, the stones being rounded, of a moderate size, and in all respects similar to those now found in the adjacent land-washes.—*Newfoundland Times*.

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